

## A new species of the spider genus *Mallinella* and the first description of the male of *M. sadamotoi* (Araneae: Zodariidae)

Akio Tanikawa

Laboratory of Biodiversity Science, School of Agriculture and Life Sciences, The University of Tokyo,  
1-1-1, Yayoi, Bunkyo-ku, Tokyo, 113-8657 Japan  
E-mail: dp7a-tknw@j.asahi-net.or.jp

**Abstract** — A new zodariid species, *Mallinella okinawaensis*, is described based on the specimens from Okinawajima Is., which can be distinguished from the other species of the genus by U-shaped epigynal plate. The male of *Mallinella sadamotoi* (Ono & Tanikawa 1990) is described for the first time, and the additional records of female specimens are presented.

**Key words** — taxonomy, new species, Okinawa, Amami, *Mallinella sadamotoi*, *Mallinella okinawaensis*, Zodariidae

A total of four species of spiders have been recorded from Japan in the genus *Mallinella* (Zodariidae) (Tanikawa 2005). Of these, *M. sadamotoi* (Ono & Tanikawa 1990) was described based on a single female specimen collected from Amami-oshima Is. of the Ryukyu Islands.

In this paper, I will describe a new species based on the specimens collected from Okinawajima Is., where *Mallinella* spiders have never been known. Besides, the male of *M. sadamotoi* will be described for the first time and the additional records of the species in Amami-ôshima Is. will be presented.

The type specimens designated in this paper are deposited in the collection of the Department of Zoology, National Science Museum, Tokyo (NSMT). All measurements are given in mm.

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### Taxonomy

Family Zodariidae Thorell 1881

Genus *Mallinella* Strand 1906

*Mallinella okinawaensis* new species

[Japanese name: Okinawa-hôshi-gumo]

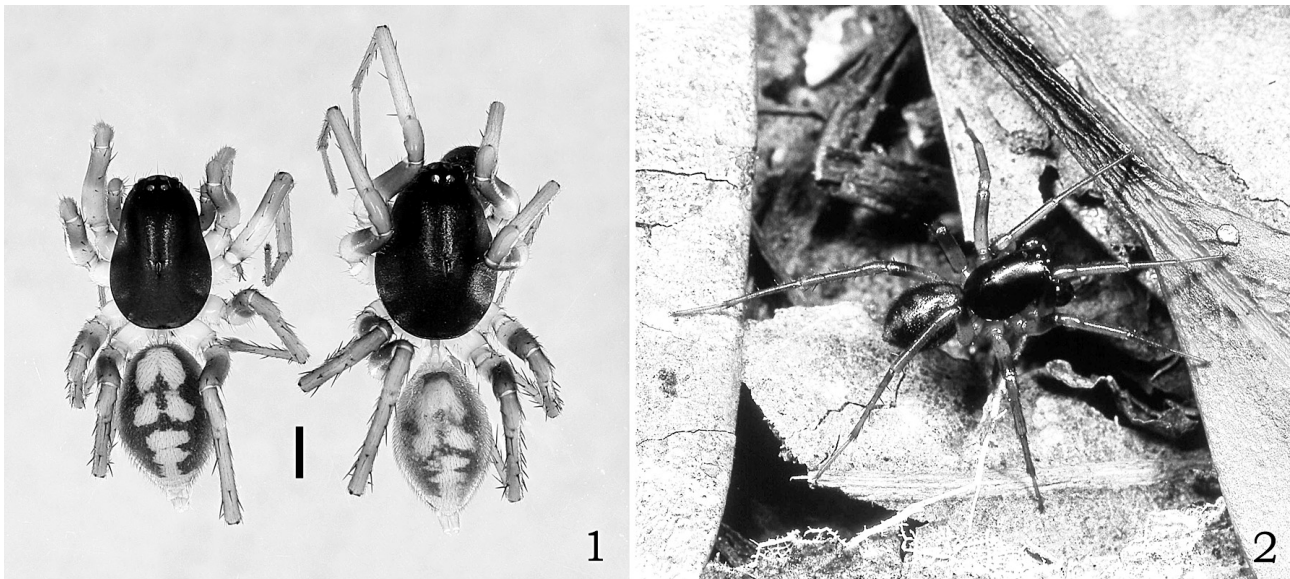
(Figs. 1, 3–5)

**Type series.** All the type specimens were collected in Okinawajima Is. Okinawa Pref., Japan. Holotype: ♀, 27-VII-1997, Yona, Kunigami-son, T. & T. Kamura leg. (NSMT-Ar 5869). Paratypes: KUNIGAMI-SON: 3♂, 23-IV-2003, Aha, M.

Kimura leg. (NSMT-Ar 5870-5872); 1♀, 25-VII-2002, Mt. Yonaha-dake, A. Tanikawa leg. (NSMT-Ar 5873); 1♀, 25-VII-2002, Yona, A. Tanikawa leg. (NSMT-Ar 5874). HIGASHI-SON: 1♀1♂, 6-VII-2003, Takae, M. Kimura leg. (NSMT-Ar 5875-5876); 1♀, 23-IV-2003, Miyagi, M. Kimura leg. (NSMR-Ar 5877). NAKIJIN-SON: 1♀, 26-VII-1997, Mt. Oppa-dake, T. & T. Kamura leg. (NSMT-Ar 5878).

**Description.** Measurements. Based on the holotype ♀ and paratype 1♂ (NSMT-Ar 5870), measurements in parentheses indicate the range among type specimens. Body ♀ 6.27 (5.59-8.17), ♂7.00 (6.62-7.38) long. Carapace ♀3.07 (2.80-3.52), ♂3.52 (3.44-3.76) long; ♀2.00 (1.77-2.40), ♂2.40 (2.40-2.60) wide. Length of legs [female/male; tarsus + metatarsus + tibia + patella + femur = total]: I, 1.42 + 1.51 + 1.63 + 0.80 + 2.02 = 7.38/1.83 + 2.20 + 2.17 + 0.93 + 2.53 = 9.66; II, 1.27 + 1.24 + 1.44 + 0.82 + 1.89 = 6.66/1.57 + 2.07 + 1.87 + 0.93 + 2.43 = 8.87; III, 1.18 + 1.82 + 1.40 + 0.84 + 1.82 = 7.06/1.47 + 2.40 + 1.77 + 0.97 + 2.33 = 8.94; IV, 1.49 + 2.64 + 2.02 + 0.87 + 2.24 = 9.26/1.93 + 3.33 + 2.50 + 1.00 + 2.87 = 11.63. Abdomen ♀2.90 (2.63-4.368), ♂3.03 (2.84-3.28) long; ♀1.93 (1.71-3.05), ♂1.90 (1.88-2.12) wide.

Female and male. Carapace longer than wide [length/width ♀1.53 (1.47-1.58), ♂1.47 (1.42-1.47)]. Median ocular area longer than wide [length/width ♀1.10 (1.06-1.12), ♂1.16 (1.06-1.18)]; almost same width as in front as behind [anterior width/posterior width ♀0.90 (0.90-1.04), ♂1.00 (0.94-1.00)]. Fang furrow of chelicera without tooth. Labium wider than long [length/width ♀0.91 (0.81-0.92), ♂0.89 (0.88-1.00)]. Sternum slightly longer than wide [length/width ♀1.04 (0.99-1.08), ♂1.10 (1.07-1.12)]. Length of leg I/length of carapace ♀2.40 (2.32-2.40), ♂2.74 (2.65-



**Figs. 1–2.** Habitus. — 1, *Mallinella okinawaensis* new species; left, female holotype (NSMT-Ar 5869); right, male paratype (NSMT-Ar 5870); 2, *Mallinella sadamotoi* (Ono & Tanikawa 1990), subadult male (NSMT-Ar 5879). (Scale: 1 mm)

2.77). Male palp (Fig. 5): tibial apophysis digitiform. Tip of median apophysis bent. Embolus almost as long as its apophysis. Abdomen longer than wide [length/width  $\pm 1.50$  (1.43–1.73),  $\pm 1.60$  (1.45–1.61)]. Epigynum (Figs. 4–5): epigynal plate U-shaped.

Coloration and markings. Female and male (Fig. 1). Carapace shiny blackish brown. Dorsum of abdomen blackish brown with white markings.

**Remarks.** *Mallinella okinawaensis* closely resembles *M. sadamotoi* of Amami-ôshima Is. Although *M. okinawaensis* can be easily distinguished from the latter by U-shaped epigynal plate in female (epigynal plate is straight in *M. sadamotoi*), these species cannot be separated from each other by the shape of male palpal organ. Moreover, the shape of male palpal organ of *M. okinawaensis* is also very similar to that of *M. hoosi* inhabiting southern parts of Kyushu and Shikoku, though they are clearly distinguishable one another by markings on the dorsum of abdomen. The male palpal organ in Japanese species of *Mallinella* seems to be rather conservative in morphology.

**Distribution.** Japan (Okinawajima Is.).

*Mallinella sadamotoi* (Ono & Tanikawa 1990)

[Japanese name: Amami-hôshi-gumo]

(Figs. 2, 6)

*Langbiana sadamotoi* Ono & Tanikawa 1990, p. 106 [female holotype from Amami-ôshima, preserved in the National Science Museum, Tokyo, NSMT-Ar 2208].

*Mallinella sadamotoi*: Tanikawa 2005, p. 175. [*Langbiana* was synonymized with *Mallinella* by Jocque (1991).]

**Male specimen examined.** 1juv., Mt. Yuwan-dake, Amami-

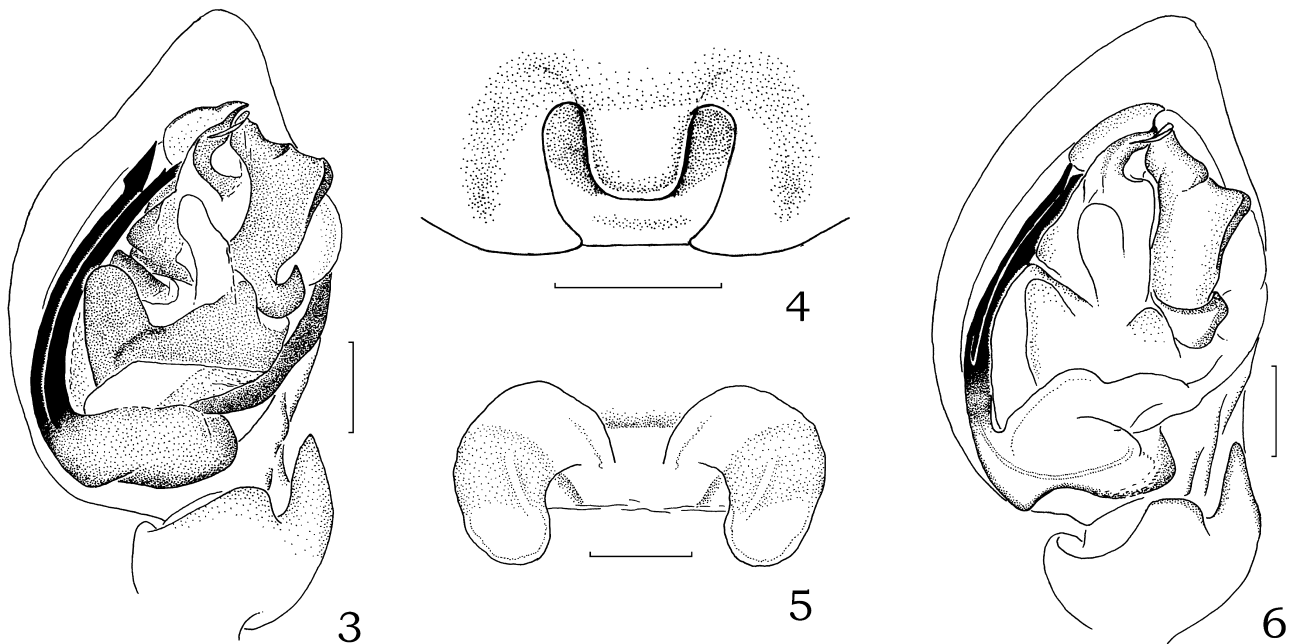
ôshima Is., Kagoshima Pref., Japan, 27-VIII-2002, A. Tanikawa leg. (NSMT-Ar 5879), became adult male on 18-I-2003 after rearing, died soon after moult.

**Additional records of female specimens.** All the specimens were collected in Amami-ôshima Is., Kagoshima Prefecture, by Yuya D. Watari using pit fall traps. Along the Amami Chû-ô Line Road: 3♀, from 25-IV to 12-VII-2004, near Sato; 1♀, from 24-IV to 11-VII-2004, 1♀, from 3 to 17-X-2004, near Kawauchi; 1♀, from 26-VI to 13-VII-2004, near Kamiya; Along the Katoku-Aoku Line Road, 2♀, near Aoku, from 27-VI to 14-VII-2004.

**Description.** Male. Measurements. Based on 1♂ from Amami-ôshima Is. (NSMT-Ar 5879). Body 7.67 long. Carapace 3.60 long, 2.60 wide. Length of legs [tarsus + metatarsus + tibia + patella + femur = total]: I, 1.85 + 2.18 + 2.08 + 0.90 + 2.40 = 9.41; II, 1.68 + 2.05 + 1.78 + 0.98 + 2.28 = 8.77; III, lost + 2.30 + 1.75 + 1.00 + 2.23 = 7.28 (except tarsus); IV, 1.90 + 3.28 + 2.45 + 1.00 + 2.37 = 11.36. Abdomen 3.80 long, width of abdomen cannot be measured because of the damage of abdomen.

Carapace longer than wide (length/width 1.38). Median ocular area almost as long as wide (length/width 1.03); almost as wide in front as behind (anterior width/posterior width 0.94). Fang furrow of chelicera without tooth. Labium almost as long as wide (0.97). Sternum almost as long as wide (length/width 1.07). Length of leg I/length of carapace 2.61. Male palp (Fig. 6): tibial apophysis digitiform. Tip of median apophysis bent. Embolus almost as long as its apophysis. Abdomen seems to be longer than wide, ratio unknown due to the damage of abdomen.

Coloration and markings. Unclear, as the specimen died soon after the last molt. General appearance of subadult



**Figs. 3–6.** Genital organ. — 3–5, *Mallinella okinawaensis* new species; 3, male palp (paratype, NSMT-Ar 5870); 4, epigynum (holotype, NSMT-Ar 5869); 5, spermatheca (paratype, NSMT-Ar 5874); 6, *Mallinella sadamotoi* (Ono & Tanikawa 1990), male palp (NSMT-Ar 5879). (Scales: 0.5 mm)

male (Fig. 2) is similar to female.

Female. See Ono & Tanikawa (1990). Variation of total length among additional specimens 6.45–7.70.

*Remarks.* The shape of male palpal organ of *Mallinella sadamotoi* is basically the same as those of *M. hoosi* and *M. okinawaensis*. They can not be distinguished from each other by the male palpal organ.

*Distribution.* Japan (Amami-ôshima Is.).

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